Docket: 02560034aa (USSN 09/633,122)

1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent application of

Rappaport	Confirmation No. 1149
Serial No. 09/633,122	Group Art Unit 2123
Filed August 4, 2000	Examiner Ayal Sharon

For   METHOD AND SYSTEM FOR DESIGNING OR DEPLOYING A COMMUNICATIONS NETWORK WHICH ALLOWS SIMULTANEOUS SELECTION OF MULTIPLE COMPONENTS

Box Non-Fee Amendment
Commissioner for Patents
PO Box 1450
Alexandria, Virginia 22313-1450

Facsimile Transmission of Copies of Pages of Applicant File
VIA FACSIMILE ON JANUARY 13, 2005 TO 571-273-3714

Sir:

Pursuant to our telephone call today, attached are copies of the following from the file for the Applicant as maintained by the undersigned.
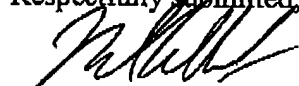
1) A copy of the action mailed by the USPTO March 15, 2004

Please note that this document does not include

(A) 1449 papers or 892 papers

(B) a Requirement for Information

Respectfully submitted,

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/633,122	08/04/2000	Theodore Rappaport	02560034aa	1149

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EXAMINER
SHARON, AYAL 1

ART UNIT	PAPER NUMBER
2123	6

DATE MAILED: 03/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/633,122	RAPPAPORT ET AL.
	Examiner	Art Unit
	Ayal I Sharon	2123

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>04 August 2000</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-15</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-15</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
   Paper No(s)/Mail Date <u>3,4,5</u>.

4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

U.S. Patent and Trademark Office
PTOL-326 (Rev. 1-04)   Office Action Summary   Part of Paper No./Mail Date 7

PAGE 3/15 * RCVD AT 1/13/2005 5:49:34 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-1/25 * DNIS:2733714 * CSID: * DURATION (mm-ss):04-44

DETAILED ACTION

Introduction

1. Claims 1-15 of U.S. Application 09/633,122 filed on 08/04/2000 are presented for examination.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. **Claims 1-5, 7-11, and 13-15 are rejected under 35 U.S.C. 102(b) based upon a public use or sale of the invention.**

4. The "SMT Plus" product, later renamed as "SitePlanner", was on sale more than one year prior to the date of application of patent in the U.S.

5. The prior art used for these rejections is as follows:

   a. "SMT Plus: Site Modeling Tool. A Software Tool for Planning Indoor Wireless Systems." © 2001. Printed from http://www.mprg.org/research/smt/smt.shtml on 3/5/04. (Referred to in this document as **"SMT Plus"**).

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> b. Rappaport, T., et al. SitePlanner ™ 3.0 User's Manual. Wireless Valley
>
> Communications. © 1998. (Referred to in this document as "**SitePlanner**
>
> **3.0**").
>
> c. "Wireless Research Leads to Indoor Planning Tool." EE Connection, Feb.
>
> 1997. Printed from http://www.ecpe.vt.edu/ecenews/feb97/smt.html on
>
> 3/5/04. (Referred to in this document as "**EE Connection**").
>
> d. "Communication Products Special Section." EDN Access, Aug. 1, 1996.
>
> Printed from http://www.e-
>
> insite.net/ednmag/archives/1996/080196/16df1.htm on 3/5/04. (Referred
>
> to in this document as "**EDN Access**").

6. The first page of the SMT Plus document contains the following quotation:

> SMT Plus was developed at MPRG in the early 1990s from years of
> indoor/microcell propagation research at Virginia Tech. It is an early
> research predecessor to SitePlanner™ Tool Suite, the powerful
> commercial indoor/microcellular prediction & measurement system
> developed by Wireless Valley Communications, Inc. Please visit the
> Wireless Valley Communications, Inc. website to learn about the full
> capabilities of this powerful indoor/microcellular engineering and system
> management tool suite.

7. The EE Connection document, dated February 1997, teaches the following:

> Research on indoor wireless propagation in the Department's Mobile and
> Portable Radio Research Group (MPRG) has led to the development of
> the first commercially available indoor/microcellular Site Modeling Tool.
> Called SMT Plus, the software helps planners with indoor site selection,
> system bidding and preliminary wireless system design.

8. The EDN Access document (p.2), dated Aug. 1, 1996, teaches the following:

> Software tool for indoor wireless system

> SMT Plus 1.0 is an interactive software tool for planning, simulating, and installing indoor wireless systems. The program displays signal strength and interference contours on building blueprints for arbitrary base-station placements. Available for DOS, Windows, and a variety of Unix platforms, SMT Plus addresses all major wireless communication standards, including AMPS, IS-136, IS-95, and wireless LAN. $2500. Virginia Polytechnic Institute and State University, Blacksburg, VA.

9. **Claims 1-5, 7-11, and 13-15 are rejected under 35 U.S.C. 102(b) as being anticipated by SitePlanner™ 3.0 User's Manual.**

10. In regards to Claim 1, Site Planner 3.0 teaches the following limitations:

> 1. A method for designing or deploying a communications network., comprising the steps of.
>
> providing a computerized model which represents a physical environment in which a communications network is or will be installed, said computerized model providing a display of at least a portion of said physical environment;

(See Site Planner 3.0, especially: pp.7-11)

p.7 teaches that "First, BDM is used to scan in, create, or import drawing blueprints of the building or campus under study."

> identifying a plurality of system components which may be used in said physical environment;

(See Site Planner 3.0, especially: pp.7-11, pp.79-89, pp.95-104)

p.8 teaches that "Predictor can be used by engineering staff to perform computer aided design and experimentation with a vast number of system configurations based on a collection of SitePlanner building drawings, ... and specific transmitters, channel lists, placement options, and antenna systems."

pp.79-89 teach the plurality of options available for adding base stations and editing their properties.

pp.95-104 teach the plurality of options available for adding and editing antenna systems.

> identifying at least one component kit composed of at least two system components of said plurality of system components,

(See Site Planner 3.0, especially: pp.97-99)

pp.97-99, teach "Manipulating components in the Antenna System".

> selecting either specific components from said plurality of system
> components or said at least one component kit for use in said computerized
> model; and

(See Site Planner 3.0, especially: pp.7-11, pp.79-89, pp.95-104)

pp.79-89 teach the plurality of options available for adding base stations and editing their properties.

pp.95-104 teach the plurality of options available for adding and editing antenna systems and subsystems.

> representing said selected specific components or said at least two
> system components of said at least one component kit in said display as
> part of a communications network.

(See Site Planner 3.0, especially: pp.7-11, pp.79-89, pp.95-104)

p.8 teaches that "Predictor can be used by engineering staff to perform computer aided design and experimentation with a vast number of system configurations based on a collection of SitePlanner building drawings, ... and specific transmitters, channel lists, placement options, and antenna systems."

11. In regards to Claim 2, Site Planner 3.0 teaches the following limitations:

> 2. The method of claim 1 wherein said second identifying step includes
> the steps of
>
> selecting said at least two system components from said plurality of
> system components identified in said first identifying step; and

(See Site Planner 3.0, especially: pp.95-105)

Fig.5.12 (p.95) shows the editing of the components of an antenna system. Fig.5.15 shows the swapping of components in an antenna system. Fig.5.16 shows the connecting of a new component to an existing antenna system.

> presenting said selected at least two system components as said at
> least one component kit in said display.

(See Site Planner 3.0, especially: pp.95-105)

Fig.5.12 (p.95) shows the editing of the components of an antenna system.

12. In regards to Claim 3, Site Planner 3.0 teaches the following limitations:

3. The method of claim 2 wherein more than one component kit is
presented in said presenting step.
(See Site Planner 3.0, especially: pp.95-105 and Fig.5.12)

p.95 says that "Any number of antennas, amplifiers, connectors, splitters,
cables, and any other component from the bill of materials can be
graphically positioned within the drawing database to form the antenna
system for a given transmitter."

13. In regards to Claim 4, Site Planner 3.0 teaches the following limitations:

4. The method of claim 2 wherein more than two system components are
in said at least one component kit.
(See Site Planner 3.0, especially: pp.95-105 and Fig.5.12)

p.95 says that "Any number of antennas, amplifiers, connectors, splitters,
cables, and any other component from the bill of materials can be
graphically positioned within the drawing database to form the antenna
system for a given transmitter."

14. In regards to Claim 5, Site Planner 3.0 teaches the following limitations:

5. The method of claim 1 further comprising the step of generating a bill
of materials containing cost information for said selected specific
components or said at least two system components of said at least one
component kit utilized in said communications network.
(See Site Planner 3.0, especially: pp.89-91 "Bill of Materials")

Fig.5.9, on p.91, has a field for "Cost(US$)"

15. In regards to Claim 7, Site Planner 3.0 teaches the following limitations:

7. The method of claim 1 wherein said system components have
performance attributes associated with them, and further comprising the
step of running prediction models using the computerized model and said
performance attributes to predict performance characteristics of said
communications network.
(See Site Planner 3.0, especially: pp.7-11 and pp.113-126)

p.8 teaches that "Predictor can be used by engineering staff to perform
computer aided design and experimentation with a vast number of system
configurations based on a collection of SitePlanner building drawings, cost
and coverage target parameters, and specific transmitters, channel lists,
placement options, and antenna systems.

p.123 teaches that "Coverage Prediction mode allows you to specify
boundary regions where you would like to see a certain level of received

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signal strength, signal-to-interference ratio, or signal-to-noise ratio, and
then it predicts and displays those boundaries as closed contours directly
on the drawing".

16. In regards to Claim 8, Site Planner 3.0 teaches the following limitations:

> 8. The method of claim 7 further comprising the steps of measuring
> performance data in said physical environment and presenting the
> measured performance data in said display.
> (See Site Planner 3.0, especially: pp.7-11 and pp.127-140)

p.9 teaches that "Once the pre-design phase of Predictor is carried out,
and the customer approves the deployment of the wireless network,
InFielder is then used to perform rapid field measurements ... InFielder
modifies the database by writing (overlaying) field measurements upon the
predictive contours produced by Predictor. Drawing files modified by
InFielder contain an 'I' in the drawing legend."

17. In regards to Claim 9, Site Planner 3.0 teaches the following limitations:

> 9. The method of claim 7 further comprising the steps of measuring
> performance data in said physical environment and comparing results from
> said prediction models to said measured performance data.
> (See Site Planner 3.0, especially: pp.7-11 and pp.127-140)

p.9 teaches that "Once the pre-design phase of Predictor is carried out,
and the customer approves the deployment of the wireless network,
InFielder is then used to perform rapid field measurements ... InFielder
modifies the database by writing (overlaying) field measurements upon the
predictive contours produced by Predictor. Drawing files modified by
InFielder contain an 'I' in the drawing legend."

18. In regards to Claim 10, Site Planner 3.0 teaches the following limitations:

> 10. An apparatus for designing and deploying a communications network,
> comprising:
>   a means for providing
>
>   (I) a computerized model which represents a physical environment
> in which a communications network is or will be installed, said
> computerized model providing a display of at least a portion of said
> physical environment, and
> (See Site Planner 3.0, especially: pp.7-11)

p.7 teaches that "First, BDM is used to scan in, create, or import drawing
blueprints of the building or campus under study."

(II) performance attributes for a plurality of system components
which may be used in said physical environment,
(See Site Planner 3.0, especially: pp.83-84)

pp.83-84 teach a means for providing performance attributes to base
stations.

means for identifying a plurality of system components which may
be used in said physical environment;
(See Site Planner 3.0, especially: pp.7-11, pp.79-89, pp.95-104)

p.8 teaches that "Predictor can be used by engineering staff to perform
computer aided design and experimentation with a vast number of system
configurations based on a collection of SitePlanner building drawings, ...
and specific transmitters, channel lists, placement options, and antenna
systems."

pp.79-89 teach the plurality of options available for adding base stations
and editing their properties.

pp.95-104 teach the plurality of options available for adding and editing
antenna systems.

means for identifying at least one component kit composed of at
least two system components of said plurality of system components;
(See Site Planner 3.0, especially: pp.97-99)

pp.97-99, teach "Manipulating components in the Antenna System".

means for selecting either specific components from said plurality
of system components or said at least one component kit for use in said
computerized model; and
(See Site Planner 3.0, especially: pp.7-11, pp.79-89, pp.95-104)

pp.79-89 teach the plurality of options available for adding base stations
and editing their properties.

pp.95-104 teach the plurality of options available for adding and editing
antenna systems and subsystems.

means for representing said selected specific components or said at
least two system components of said at least one component kit in said
display as part of a communications network.
(See Site Planner 3.0, especially: pp.7-11, pp.79-89, pp.95-104)

p.8 teaches that "Predictor can be used by engineering staff to perform
computer aided design and experimentation with a vast number of system

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> configurations based on a collection of SitePlanner building drawings, ...
> and specific transmitters, channel lists, placement options, and antenna
> systems. Pp.78-89 and 95-104 teach the means for doing so."

19. In regards to Claim 11, Site Planner 3.0 teaches the following limitations:

> 11. The apparatus of claim 10 further comprising a means for generating a
> bill of materials containing cost information for said selected specific
> components utilized in said communications network.
> (See Site Planner 3.0, especially: pp.89-91 "Bill of Materials")

> Fig.5.9, on p.91, has a field for "Cost(US$)"

20. In regards to Claim 13, Site Planner 3.0 teaches the following limitations:

> 13. The apparatus of claim 10 further comprising
>   means for associating performance attributes with said system
> components; and
> (See Site Planner 3.0, especially: pp.7-11 and pp.113-126)

> p.8 teaches that "Predictor can be used by engineering staff to perform
> computer aided design and experimentation with a vast number of system
> configurations based on a collection of SitePlanner building drawings, cost
> and coverage target parameters, and specific transmitters, channel lists,
> placement options, and antenna systems.

> means for running prediction models using the computerized model
> and said performance attributes to predict performance characteristics of
> said communications network.
> (See Site Planner 3.0, especially: pp.7-11 and pp.113-126)

> p.123 teaches that "Coverage Prediction mode allows you to specify
> boundary regions where you would like to see a certain level of received
> signal strength, signal-to-interference ratio, or signal-to-noise ratio, and
> then it predicts and displays those boundaries as closed contours directly
> on the drawing".

21. In regards to Claim 14, Site Planner 3.0 teaches the following limitations:

> 14. The apparatus of claim 13 further comprising a means for measuring
> performance data and presenting the measured performance data in said
> display.
> (See Site Planner 3.0, especially: pp.7-11 and pp.127-140)

> p.9 teaches that "Once the pre-design phase of Predictor is carried out,
> and the customer approves the deployment of the wireless network,
> InFielder is then used to perform rapid field measurements ... InFielder

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> modifies the database by writing (overlaying) field measurements upon the
> predictive contours produced by Predictor. Drawing files modified by
> InFielder contain an 'I' in the drawing legend."

22. In regards to Claim 15, Site Planner 3.0 teaches the following limitations:

> 15. The apparatus of claim 13 further comprising a means for comparing
> measured performance data with results from said prediction models.
> (See Site Planner 3.0, especially: pp.7-11 and pp.127-140)

> p.9 teaches that "Once the pre-design phase of Predictor is carried out,
> and the customer approves the deployment of the wireless network,
> InFielder is then used to perform rapid field measurements ... InFielder
> modifies the database by writing (overlaying) field measurements upon the
> predictive contours produced by Predictor. Drawing files modified by
> InFielder contain an 'I' in the drawing legend."

Claim Rejections - 35 USC § 103

23. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

24. The prior art used for these rejections is as follows:

a. Rappaport, T., et al. SitePlanner ™ 3.0 User's Manual. Wireless Valley

   Communications. © 1998. (Referred to in this document as "SitePlanner

   3.0").

b. Ahmed, Mansoor. "Use of Topographic Maps with Building Information to

   Determine Antenna Placement for Radio Detection and Tracking in Urban

   Environments". MPRG-TR-95-19. Nov. 1995. (Referred to in this

   document as "Ahmed").

25. **Claims 6 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over SitePlanner 3.0 in view of Ahmed.**

26. In regards to Claim 6, Site Planner 3.0 does not expressly teach the following limitations:

> 6. The method of claim 1 wherein said display is three dimensional.

Ahmed, on the other hand, does expressly teach the use of a 3D display in propagation prediction using ray tracing. (See p.7, Figure 2.1 – Item "Trace Rays in 3D", and p.92, Figure 7.2, "Rays traced for receiver 40.)

It would have been obvious to one of ordinary skill in the art to modify the teachings of SitePlanner 3.0 with those of Ahmed, because doing so enables the prediction of signal strength and power delay profile (see p.6, last paragraph, and p.7, Fig.2.1).

27. In regards to Claim 12, Site Planner 3.0 does not expressly teach the following limitations:

> 12. The apparatus of claim 10 wherein said display is three dimensional.

Ahmed, on the other hand, does expressly teach the use of a 3D display in propagation prediction using ray tracing. (See p.7, Figure 2.1 – Item "Trace Rays in 3D", and p.92, Figure 7.2, "Rays traced for receiver 40.)

It would have been obvious to one of ordinary skill in the art to modify the teachings of SitePlanner 3.0 with those of Ahmed, because doing so enables the prediction of signal strength and power delay profile (see p.6, last paragraph, and p.7, Fig.2.1).

Correspondence Information

Any inquiry concerning this communication or earlier communications from

the examiner should be directed to Ayal I. Sharon whose telephone number is

(703) 306-0297. The examiner can normally be reached on Monday through

Thursday, and the first Friday of a biweek, 8:30 am – 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the

examiner's supervisor, Kevin Teska can be reached on (703) 305-9704. Any

response to this office action should be mailed to:

Director of Patents and Trademarks
Washington, DC 20231

Hand-delivered responses should be brought to the following office:

4th floor receptionist's office
Crystal Park 2
2121 Crystal Drive
Arlington, VA

The fax phone number is: (703) 872-9306

Any inquiry of a general nature or relating to the status of this application

or proceeding should be directed to the receptionist, whose telephone number is:

(703) 305-3900.

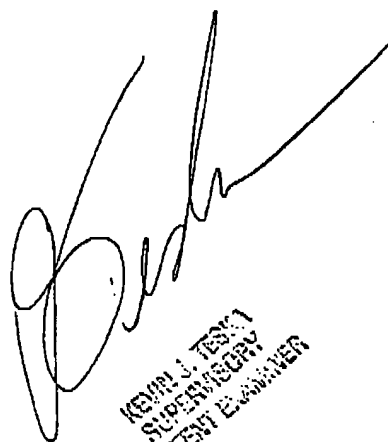Application/Control Number: 09/633,122   Page 13
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       March 5, 2004

KEVIN J. TESKA
SUPERVISORY
PATENT EXAMINER